WaterSense High-Efficiency Toilet Guide

Toilets are the greatest user of water in the typical North American home. WaterSense high-efficiency toilets use a maximum of 1.28 gallons per flush. Based on the type of toilets that a family of four uses, the figure below shows how much water can be saved in a year if their toilets are replaced with WaterSense high-efficiency models:

- Replacing pre-1980 models using 7 gallons per flush saves almost 42,000 gallons per year.
- Replacing pre-1980 models using 5 gallons per flush saves almost 30,000 gallons per year.
- Replacing post-1980 models using 3.5 gallons per flush saves over 16,000 gallons per year.
- Replacing post 1990 models using 1.6 gallons per flush saves over 2,000 gallons per year.

Recent Toilet Improvements and Parlance

While some states mandated the 1.6 gallon-per-flush toilet several years before, in 1995 the National Energy Policy Act went into effect. The federal law mandated that new toilets must flush with no more than 1.6 gallons of water, less than half of the amount they used in the 1980's, when 3.5 gallons per flush was standard. This new toilet was called the low-flow toilet or ultra low-flow toilet (ULFT). Unfortunately, many Americans were disappointed and frustrated with performance problems of the first generation of new toilets. Since their mandate, manufacturers have solved these problems by modifying passageways to move a reduced amount of water more vigorously around the bowl.

In 1998, a new product was introduced in the U.S. by Caroma: the high-efficiency toilet. These fixtures use 20 percent less water than low-flow toilets, or 1.28 gallons per flush or less. Water-efficiency professionals decided that "high-efficiency" was a more positive, performance-indicative term that would leave behind some of the hard feelings surrounding the low-flow toilets.

In June of 2006, The U.S. EPA launched the WaterSense program to educate American consumers on making smart water choices that save money and maintain high environmental standards without compromising performance.

WaterSense Toilets– Why WaterSense?

WaterSense, a program sponsored by the U.S. Environmental Protection Agency (EPA), is helping consumers identify high-performance, water-efficient toilets that can reduce water use in the home and help preserve our Nation's water resources. The WaterSense label is used on toilets that are certified by independent laboratory testing to meet rigorous criteria for both performance and efficiency. WaterSense toilets not only use at least 20 percent less water than the current federal standard of 1.6 gallons per flush; they also provide equal or superior performance.

After the widespread toilet disappointment of the late 1990's, WaterSense is careful to advocate only the best in toilet technology. WaterSense toilets are truly the best of all worlds.

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Within about half a year, they announced their specifications for high-efficiency toilets and began accepting applicants. WaterSense toilets follow the water use standard of high-efficiency toilets (1.28 gallons per flush) and also adhere to rigorous third-party verified performance standards. WaterSense labeled high-efficiency toilets must be able to flush a minimum of 350 grams of soybean paste and include a flush valve flapper or seal on the flush with a resistance to chlorine and hard water.

Benefits

Saving Water

Dual-flush high-efficiency toilets use 1.6 gallons per flush for a full flush and 0.8 gallons per flush for the reduced flush. Studies show that dual-flush toilets average 1.3 gallons per flush. Pressure-assist toilets use a little under 1 gallon per flush.

The U.S. EPA estimates that if you replace your home's older toilets with WaterSense labeled models, you can save 4,000 gallons per year, indefinitely. The National Association of Homebuilders reports that while toilet tank components require some maintenance, toilet fixtures themselves have an unlimited lifespan.

Performance

After the performance troubles of first generation low-flow toilets of the late 1990's, concerns of needing to double and triple flush water-saving toilets have haunted the toilet industry. The U.S. EPA's WaterSense program has set high performance standards to cast aside these concerns. Design advances have enabled WaterSense labeled toilets to save water with no trade-off in flushing power. In fact, many outperform standard toilets in consumer testing. For performance specification details, please visit epa.gov/watersense and select "High-Efficiency Toilets."

Considerations

Finding a WaterSense High-efficiency Toilet

Visit your local or online home improvement store armed with a current list of approved WaterSense high-efficiency toilets from epa.gov/watersense. If you would like the list mailed to you, please call us at 757-259-5416. Ask the retailer for high-efficiency toilets (1.28 gallons per flush or less); retailers may carry WaterSense labeled toilets without being aware. On store products, look for the model numbers on your WaterSense high-efficiency toilet list. Any decimal portion and letters on products, beyond what is given on the WaterSense list, pertain to extra

A Brief Touch on Mechanics.

The high-efficiency toilet market is expanding rapidly. Four technologies have emerged in high-efficiency toilet design: dual-flush, pressure-assist, single-flush gravity, and flushometer valve. Dual-flush and pressure-assist are most common.

A dual-flush high-efficiency toilet is a gravity-flush toilet that saves water by offering different flush volumes: a full-flush for solids and a half-flush for liquids. The pressure-assist high-efficiency toilet has a sealed compartment inside the tank that contains air and becomes pressurized when water from the supply line fills the compartment. When the flush button is pressed, pressurized air exerts force on the water in the compartment and water shoots into the bowl. The pressure-assist fixture creates a fast flush with a "wooshing" sound. What they lack in quietness, they make up for in water savings. Although these toilets will be slightly louder than standard gravity-flush toilets, they use just under 1 gallon per flush.

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specifications (bowl shape, color) that are not important to the WaterSense designation of the toilet.

Many high-efficiency toilets are sold in two parts, with the tank and bowl sold separately. Only the combinations of tank and bowl models on the WaterSense high-efficiency toilet list have been certified to bear the WaterSense label and are rebated by JCSA.

Noise

Noise is slightly greater for the pressure-assist type than for the dual-flush or single-flush gravity. In one study in Redwood City, California, 78 percent of customers in the residential high-efficiency toilet program were neutral, satisfied, or very satisfied about the level of flushing noise with their new high-efficiency toilet.

Cost

WaterSense labeled toilets are available in a wide variety of prices and styles. The EPA estimates that if a family of four that replaces its home's older toilets with WaterSense labeled ones, it will save, on average, roughly $1,000 over the next 10 years – enough for the WaterSense high-efficiency toilet to pay for itself within a few years.

Testing for the WaterSense program shows that there is no correlation between price and performance of a high-efficiency toilet. WaterSense labeled toilet prices can range from less than $100 to over $1,000, much of the variation due to style alone. In this region, WaterSense labeled high-efficiency toilets cost anywhere from about $250 to $750.

In Order to Save Additional Water...

- Use a wastebasket for tissues and trash instead of flushing them down the toilet.
- Keep your toilet in top running condition. If you touch the flapper and get black 'goo' on your hand, the flapper needs to be replaced.
- Test for leaks by putting a few drops of food coloring or some colored liquid (such as coffee or tea) in your tank and wait ten minutes. If, without flushing, the color begins to appear in the bowl, you have a leak, which should be repaired immediately.

Drainline and Sewer Problems

Since the introduction of the low-flow 1.6 gallons-per-flush toilet in the early 1990's, questions have been raised about whether water-saving toilets flush with a sufficient volume of water to move solid wastes through the building drainlines and the municipal sewer system. To date, there has been no evidence that waste transport problems occur due to low-flow toilets.

The introduction of high-efficiency toilets in the late 1990s precipitated the same concerns. As a result, a collaboration of water utilities sponsored a full laboratory study to address the issue. The drainline study, completed in 2004, concluded that high-efficiency toilets flushing with as little as 1 gallon provide sufficient water in residential and commercial applications to move the waste from the fixtures to the sewer.

The transport of waste through municipal sewer lines has not become a problem in areas with a concentration of high-efficiency toilets. Supplementary wastewater flows from other water uses are always sufficient to move solids through the system.

A word of caution when installing in degraded or sensitive sewer situations:

high-efficiency toilets must meet the very same flushing performance and drainline waste transport requirements as all other toilets sold in the United States and Canada. All toilets, regardless of flush volume, may experience problems when installed in locations with degraded or damaged drainline systems, for example, root intrusion, sagging or broken lines, buildup of solids, or very long drainline runs with no additional sources of wastewater near the toilet fixture. Water customers are recommended to consult a plumbing expert and exercise caution when considering high-efficiency toilet installation in one of these situations.

What to Do with Your Old Toilet

Several local charities may accept used toilets. Some provide free pick-up. Donation helps efforts to provide affordable houses to low-income families. Please visit our website at jamescitycountyva.gov/bewatersmart for more details about how to recycle or donate your old toilet.

If you are a resident, then you can throw out your old toilet using County bulk disposal services. Bulk disposal is available at the Convenience Center at 1204 Jolly Pond Road. Pickup may be available. One coupon charge is required. See jamescitycountyva.gov/recycling for details.

WaterSense High-Efficiency Toilet Rebate Form

JAMES CITY SERVICE AUTHORITY

Requirements

- Applicant and installation address must be a JCSA residential water customer. Account balance must be current.
- WaterSense high-efficiency toilet rebate request must be submitted and received within 180 days of purchase and installation.
- Toilet model number(s) must be on current list of WaterSense high-efficiency toilets as found at ww.epa.gov/watersense.
- Toilet must be purchased and installed prior to application for rebate.
- Applicant is solely responsible for purchase and installation arrangements and payments.
- Applicant agrees to allow JCSA inspector access to the premises in order to verify installation if selected for random inspection
- Survey and form must be completed in their entirety and copy of receipt enclosed to be eligible for WaterSense high-efficiency toilet rebate.
- JCSA will refund purchase price up to $40 per WaterSense high-efficiency toilet.
- Rebated WaterSense high-efficiency toilets must be replacement fixtures.
- Rebate checks will be processed within 4-8 weeks of receipt.

Survey

- Type of structure: ☐ Single-family ☐ Multi-family ☐ Other:_____
- What is the main reason for installing your Energy Star qualified high-efficiency toilet? ☐ To reduce municipal water demand ☐ Performance ☐ To save water ☐ Other: _____
- Do you plan on installing any other water conservation or low impact development features, such as other WaterSense products, irrigation control technologies, green roofs, rain gardens, porous pavement, or retention ponds? ☐ Yes ☐ No If yes, what features? _____
- Were you previously aware of the availability of high-efficiency toilets? ☐ Yes ☐ No
- How much did this rebate influence your buying decision? ☐ Completely ☐ Somewhat ☐ Not at all
- Is this a replacement fixture? ☐ Yes ☐ No
- Reason for this purchase? ☐ Old one not working ☐ Remodeling ☐ Other:_____
- Manufacture year of fixture you are replacing? (Date of manufacture can often be found on inside of tank or lid)_____
- Tank size of fixture you are replacing, if known?_____
- What will happen to your old fixture? ☐ Trash ☐ Recycle ☐ Sell ☐ Give away or donate ☐ Other: _____
- Date of installation:_____ Store/website of purchase:_____
- Please fill out all model numbers that apply and indicate whether the fixture is a replacement to an older toilet:

  Toilet 1 HET model:_____ Tank model: _____ Bowl model:_____ ☐ Replacement
  Toilet 2 HET model:_____ Tank model: _____ Bowl model:_____ ☐ Replacement
  Toilet 3 HET model:_____ Tank model: _____ Bowl model:_____ ☐ Replacement
  Toilet 4 HET model:_____ Tank model: _____ Bowl model:_____ ☐ Replacement
  Toilet 5 HET model:_____ Tank model: _____ Bowl model:_____ ☐ Replacement

  If you would like to include more toilets to be rebated, please attach additional list on a separate page.
- How did you hear about this rebate?_____

Applicant Information

Name:_____

Mailing address: _____ City:_____ State:_____ Zip:_____

Home phone number:_____ Email Address:_____

Installation address (if different):_____ City:_____ State:_____ Zip:_____

Disclaimer

I certify that the listed WaterSense high-efficiency toilet(s) has/have been purchased and installed for use at the above named address and meet the requirements of the James City Service Authority (JCSA) High-Efficiency Toilet Rebate Program. I also acknowledge that my home may be subject to an inspection by the JCSA or its agent to verify the information provided herein. I understand that if I am required by my neighborhood to fulfill the actions rebated, then I am not eligible for the rebate. I understand that the WaterSense high-efficiency toilet tank and bowl models listed at www.epa.gov/watersense/ must be installed as a unit to be certified WaterSense and applicable for this rebate.

The JCSA may deny any application that does not meet program requirements. The JCSA does not guarantee any of the benefits in the preceding guide; nor does it warranty freedom from defects, quality of workmanship, or suitability of the premises for the installation of WaterSense high-efficiency toilets or associated products. The applicant will hold harmless James City County, JCSA, its agents, directors, officers, and employees against all loss, damage, expense and liability arising out of or in any way connected to the installation of the above WaterSense high efficiency toilets or associated products. The JCSA reserves the right to change or terminate this program at any time.

Please remit completed rebate form and copy of receipt to:
High-Efficiency Toilet Rebate Program
c/o JCSA
119 Tewning Road
Williamsburg, VA 23188-2639
Fax: 757-229-2463

Signature: _____ Date: _____ Rev. July 1, 2015

FOR JCSA USE ONLY

Date Received: _____ ☐ Approved ☐ Denied. Reason denied: _____

Date Approved: _____ Rebate Amount: _____ Signature: _____

For more information on this and other water conservation rebates, call 757-259-5416,
Email jcsa@jamescitycountyva.gov or go to our website at jamescitycountyva.gov/jcsa

James City County VIRGINIA Jamestown 1607